

Claims

1. A device for purifying exhaust gases from a combustion engine (1), comprising an arrangement (30) for recirculating exhaust gases from the engine to an air intake (2) thereof, a valve device (12) controlled by a control device (13) for regulating the relation between fresh air and recirculated exhaust gases supplied to the engine, and a regenerable filter (8) adapted to catch particulate constituents of the exhaust gases, **characterized** in that the device comprises means (14) for recording the temperature of the exhaust gases from the engine, and that the control device (13) is adapted to be supplied with temperature information from said temperature recording means (14), the control device (13) being adapted, with the aid of this temperature information and the valve device (12), to regulate the relation between fresh air and recirculated exhaust gases supplied to the engine so as to achieve a composition of the exhaust gases from the engine that is favourable with respect to the regeneration of the filter (8).
2. A device according to claim 1, **characterized** in that the control device (13) is adapted, with the aid of said temperature information and the valve device (12), to regulate the relation between fresh air and recirculated exhaust gases supplied to the engine so that a regeneration of the filter (8) will take place at the prevailing temperature level of the exhaust gases.
3. A device according to claim 2, **characterized** in that the control device (13) is adapted, with the aid of said temperature information and the valve device (12), to regulate the relation between fresh air and recirculated exhaust gases supplied to the engine so as to achieve a relation between  $\text{NO}_x$  and soot of the exhaust gases from the

engine that is favourable for the regeneration of the filter (8).

- 5      4.    A device according to claim 3, **characterized** in that the device comprises means (7) for converting NO occurring in the exhaust gases into NO<sub>2</sub>.
- 10     5.    A device according to claim 4, **characterized** in that said converting means comprises a catalyst (7) capable of converting NO into NO<sub>2</sub>, which is arranged upstream of the filter (8).
- 15     6.    A device according to claim 4 or 5, **characterized** in that said converting means comprises a catalytic material capable of converting NO into NO<sub>2</sub>, which material is integrated in the filter (8).
- 20     7.    A device according to anyone of the preceding claims, **characterized** in that the filter (8) comprises a catalytic material capable of lowering the temperature at which particulate constituents deposited in the filter are ignited and combusted.
- 25     8.    A method for regulating the relation between supplied fresh air and recirculated exhaust gases of a combustion engine (1) which comprises an arrangement (30) for recirculating exhaust gases from the engine to an air intake (2) thereof, a valve device (12) controlled by a control device (13) for regulating the relation between fresh air and recirculated exhaust gases supplied to the engine and a regenerable filter (8) adapted to catch particulate constituents of the exhaust gases, **characterized** in that the temperature of the exhaust gases from the engine is recorded, and that the control device (13) is supplied with information regarding said temperature, the control device (13) regulating, with the aid of this temperature information and
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the valve device (12), the relation between fresh air and recirculated exhaust gases supplied to the engine so as to achieve a composition of the exhaust gases from the engine that is favourable with respect to the regeneration of the filter.

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9. A method according to claim 8, **characterized** in that the control device (13), with the aid of said temperature information and the valve device (12), regulates the relation between fresh air and recirculated exhaust gases supplied to the engine so that a regeneration of the filter (8) will take place at the prevailing temperature level of the exhaust gases.

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10. A method according to claim 9, **characterized** in that the control device (13), with the aid of said temperature information and the valve device (12), regulates the relation between fresh air and recirculated exhaust gases supplied to the engine so as to achieve a relation between NO<sub>x</sub> and soot of the exhaust gases from the engine that is favourable for the regeneration of the filter (8).

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11. Use of a device according to anyone of claims 1-7 for purifying exhaust gases from a diesel engine.

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